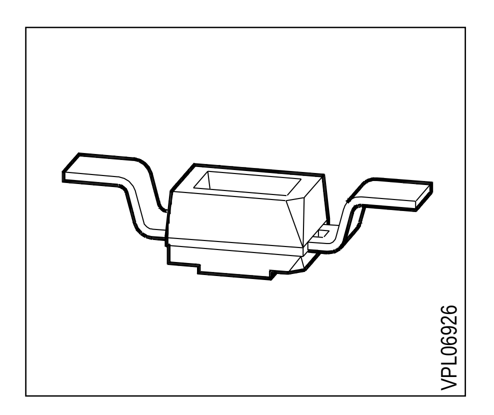
SIEMENS

Hyper Mini TOPLED® RG
Hyper-Bright LED

LS M776, LA M776, LO M776
LY M776



Besondere Merkmale

- Gehäusefarbe: weiß
- als optischer Indikator einsetzbar
- zur Hinterleuchtung, Lichtleiter- und Linseneinkopplung
- für alle SMT-Bestück- und Löttechniken geeignet
- gegurtet (8-mm-Filmgurt)

Features

- color of package: white
- for use as optical indicator
- for backlighting, optical coupling into light pipes and lenses
- suitable for all SMT assembly and soldering methods
- available taped on reel (8 mm tape)

Typ Type	Emissions-farbe Color of Emission	Farbe der Licht-austrittsfläche Color of the Light Emitting Area	Lichtstärke Luminous Intensity I_F = 20 mA I_V (mcd)	Lichtstrom Luminous Flux I_F = 20 mA Φ_V (mlm)	Bestellnummer Ordering Code
LS M776-MQ	super-red	colorless clear	16 … 125	-	Q62703-Q3859
LS M776-N			25 … 50	100 (typ.)	Q62703-Q3860
LS M776-P			40 … 80	180 (typ.)	Q62703-Q3861
LS M776-Q			63 … 125	300 (typ.)	Q62703-Q3862
LS M776-NR			25 … 200	-	Q62703-Q3863
LA M776-NR	amber	colorless clear	25 … 200	-	Q62703-Q3864
LA M776-P			40 … 80	180 (typ.)	Q62703-Q3865
LA M776-Q			63 … 125	300 (typ.)	Q62703-Q3866
LA M776-R			100 … 200	450 (typ.)	Q62703-Q3867
LA M776-PS			40 … 320	-	Q62703-Q3868
LO M776-NR	orange	colorless clear	25 … 200	-	Q62703-Q3869
LO M776-P			40 … 80	180 (typ.)	Q62703-Q3870
LO M776-Q			63 … 125	300 (typ.)	Q62703-Q3871
LO M776-R			100 … 200	450 (typ.)	Q62703-Q3872
LO M776-PS			40 … 320	-	Q62703-Q3873
LY M776-NR	yellow	colorless clear	25 … 200	-	Q62703-Q3874
LY M776-P			40 … 80	180 (typ.)	Q62703-Q3875
LY M776-Q			63 … 125	300 (typ.)	Q62703-Q3876
LY M776-R			100 … 200	450 (typ.)	Q62703-Q3877
LY M776-PS			40 … 320	-	Q62703-Q3878

Streuung der Lichtstärke in einer Verpackungseinheit $I_{V\,max} / I_{V\,min} \leq 2.0$.
Luminous intensity ratio in one packaging unit $I_{V\,max} / I_{V\,min} \leq 2.0$.

Grenzwerte
Maximum Ratings

Bezeichnung Parameter	Symbol Symbol	Werte Values		Einheit Unit
		LS, LO, LA	LY	
Betriebstemperatur Operating temperature range	T_{op}	– 55 ... + 100		˚C
Lagertemperatur Storage temperature range	T_{stg}	– 55 ... + 100		˚C
Sperrschichttemperatur Junction temperature	T_j	+ 100		˚C
Durchlaßstrom Forward current	I_F	30	20	mA
Stoßstrom Surge current $t \leq 10$ µs, $D = 0.005$	I_{FM}	to be defined		A
Sperrspannung[1)] Reverse voltage[1)]	V_R	3		V
Verlustleistung Power dissipation	P_{tot}	80[2)]	55[2)]	mW
Wärmewiderstand Thermal resistance Sperrschicht / Umgebung Junction / air Montage auf PC-board[*)] (Padgröße ≥ 16 mm^2) mounted on PC board[*)] (pad size ≥ 16 mm^2)	$R_{th\ JA}$	630[2)]	500	K/W

1) Belastung in Sperrichtung sollte vermieden werden.
1) Reverse biasing should be avoided.

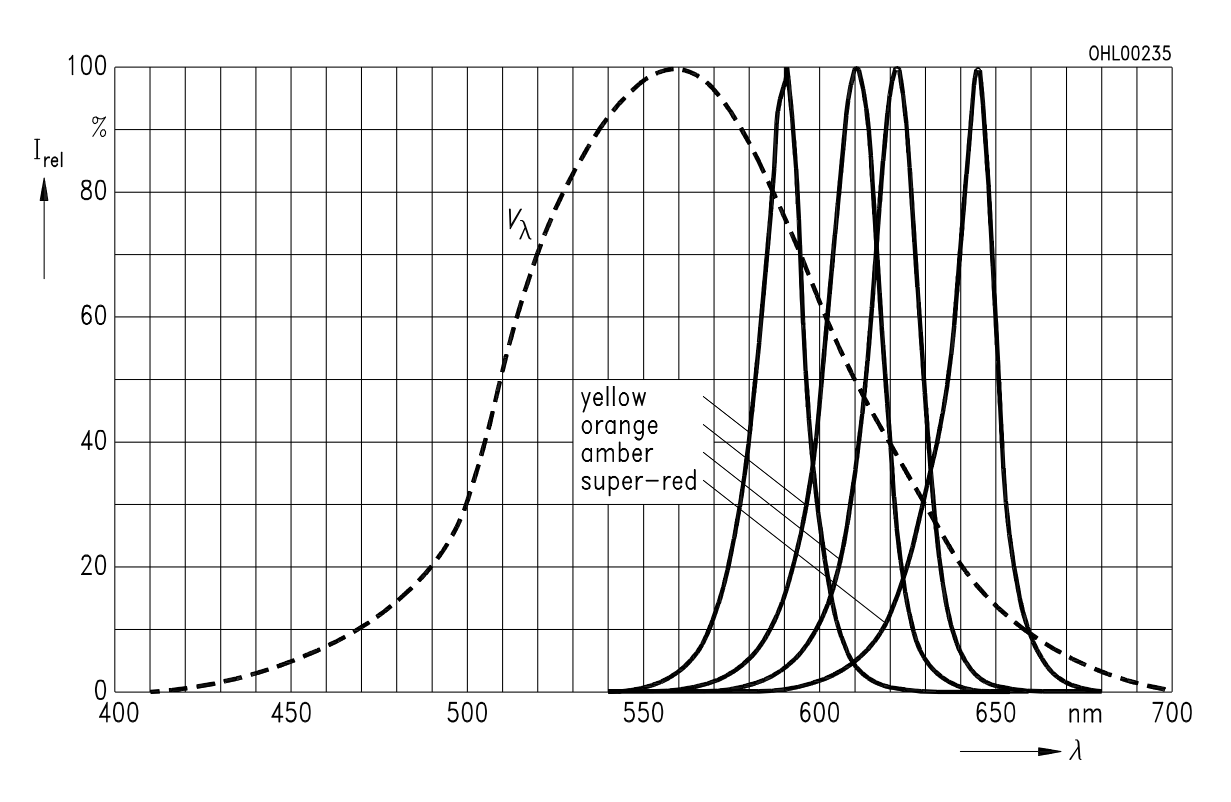
2) vorläufig/preliminary

*) PC-board: FR4

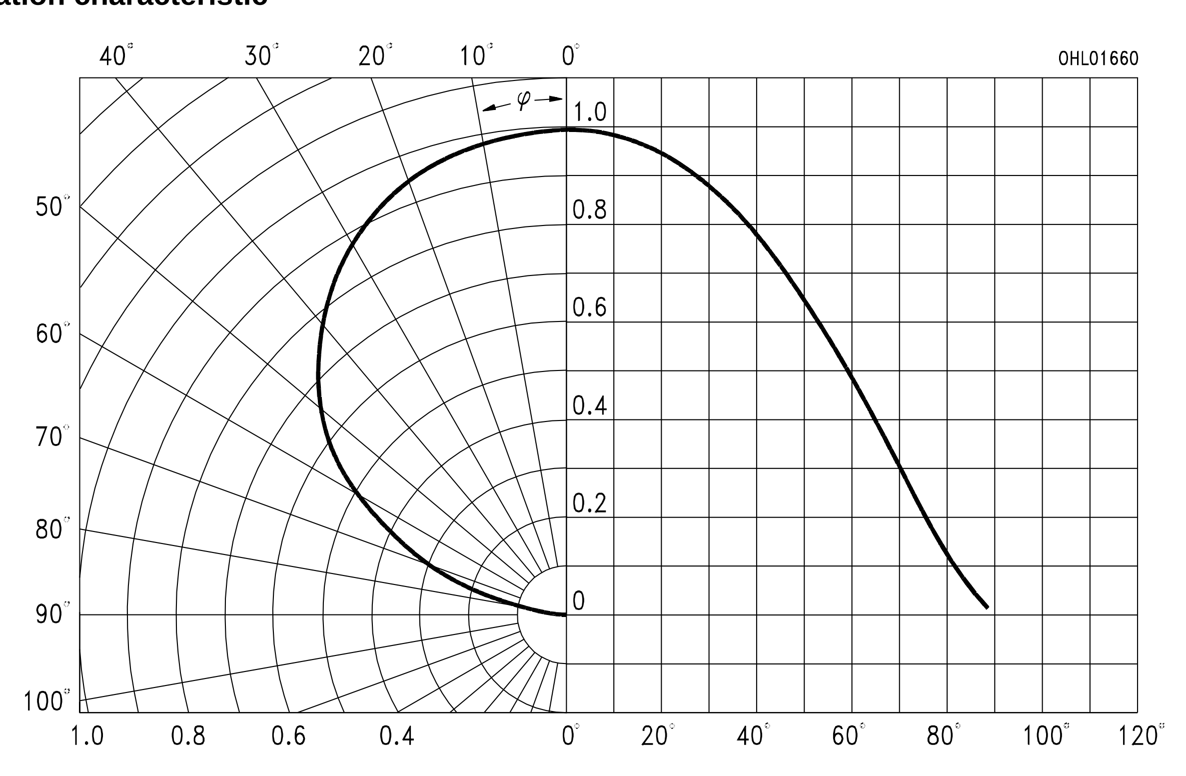
Kennwerte (T_A = 25 ˚C)
Characteristics

Bezeichnung Parameter	Symbol Symbol	Werte Values				Einheit Unit
		LS	LA	LO	LY	
Wellenlänge des emittierten Lichtes (typ.) Wavelength at peak emission (typ.) I_F = 20 mA	λ_{peak}	645	622	610	591	nm
Dominantwellenlänge (typ.) Dominant wavelength (typ.) I_F = 20 mA	λ_{dom}	632	615	605	587	nm
Spektrale Bandbreite bei 50% $I_{rel\ max}$ (typ.) Spectral bandwidth at 50% $I_{rel\ max}$ (typ.) I_F = 20 mA	$\Delta\lambda$	16	16	16	15	nm
Abstrahlwinkel bei 50% I_v (Vollwinkel) Viewing angle at 50% I_v	2φ	120	120	120	120	Grad deg.
Durchlaßspannung (typ.) Forward voltage (max.) I_F = 20 mA	V_F V_F	2.0 2.6	2.0 2.6	2.0 2.6	2.0 2.6	V V
Sperrstrom (typ.) Reverse current (max.) V_R = 3 V	I_R I_R	0.01 10	0.01 10	0.01 10	0.01 10	µA µA
Temperaturkoeffizient von λ_{dom} (I_F = 20 mA) Temperature coefficient of λ_{dom} (I_F = 20 mA)	TC_λ	0.014	0.062	0.067	0.096	nm/K
Temperaturkoeffizient von λ_{peak}, I_F = 20 mA (typ.) Temperature coefficient of λ_{peak}, I_F = 20 mA (typ.)	TC_λ	0.14	0.13	0.13	0.13	nm/K
Temperaturkoeffizient von V_F, I_F = 20 mA (typ.) Temperature coefficient of V_F, I_F = 20 mA (typ.)	TC_V	– 1.95	– 1.78	– 1.67	– 2.51	mV/K

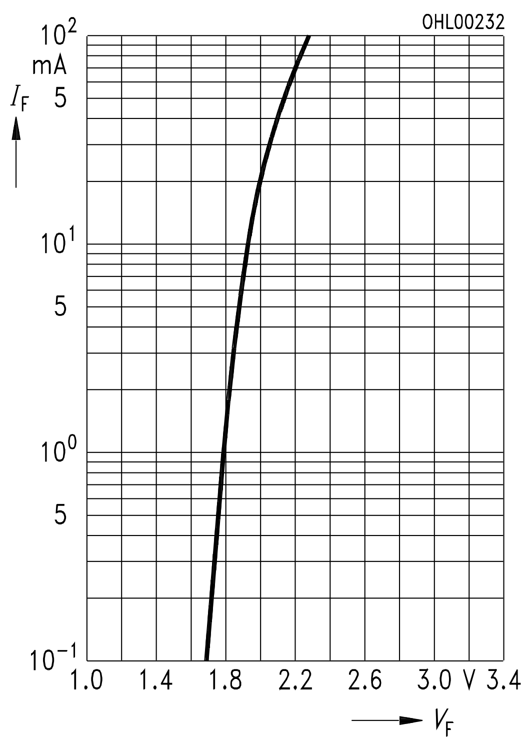
Relative spektrale Emission $I_{rel} = f(\lambda)$, T_A = 25 ˚C, I_F = 10 mA
Relative spectral emission
V(λ) = spektrale Augenempfindlichkeit
Standard eye response curve



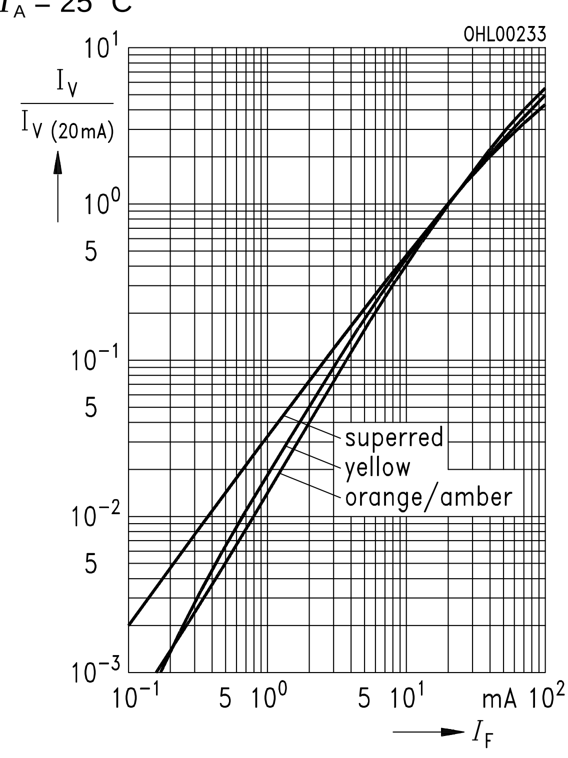
Abstrahlcharakteristik $I_{rel} = f(\varphi)$
Radiation characteristic



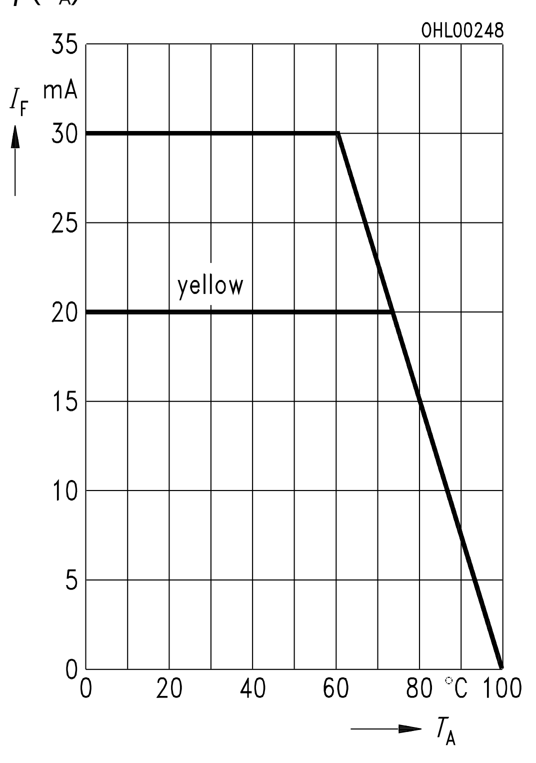
Durchlaßstrom $I_F = f(V_F)$
Forward current
T_A = 25 ˚C



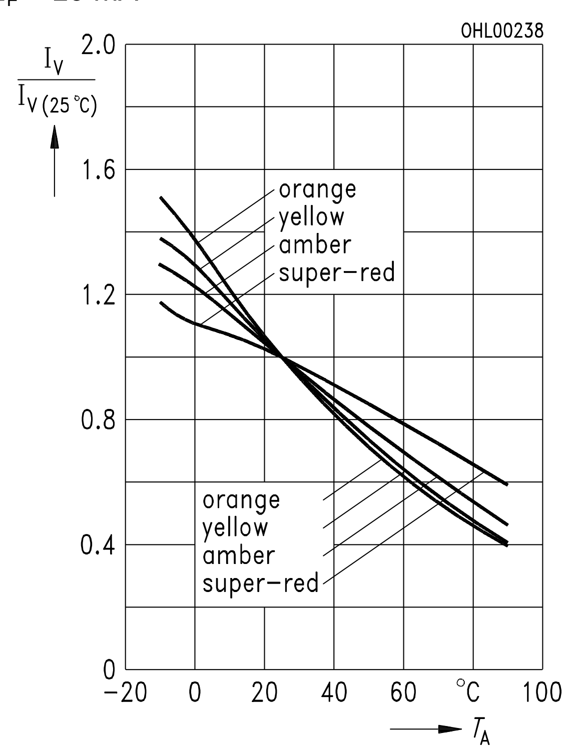
Relative Lichtstärke $I_V / I_{V(20 mA)} = f(I_F)$
Relative luminous intensity
T_A = 25 ˚C



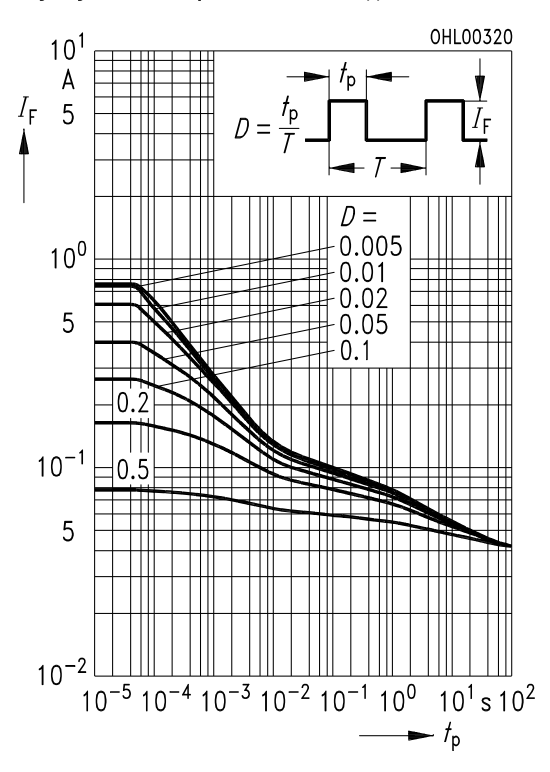
Maximal zulässiger Durchlaßstrom
Max. permissible forward current
$I_F = f(T_A)$



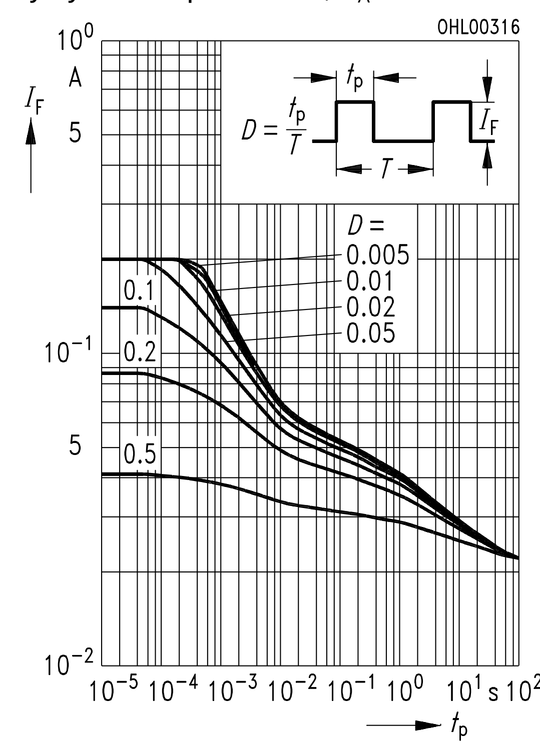
Relative Lichtstärke $I_V / I_{V(25 °C)} = f(T_A)$
Relative luminous intensity
I_F = 10 mA



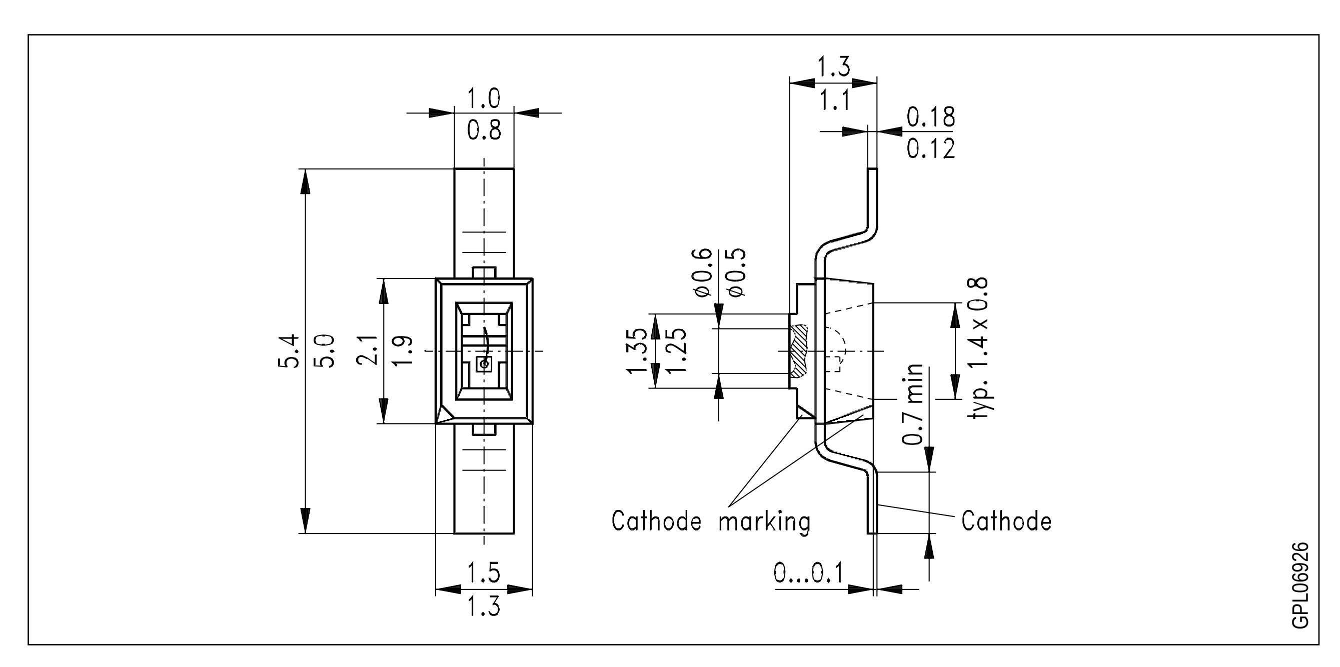
Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible pulse handling capability
LS, LA, LO
Duty cycle D = parameter, T_A = 25 ˚C



Zulässige Impulsbelastbarkeit $I_F = f(t_p)$
Permissible pulse handling capability
LY
Duty cycle D = parameter, T_A = 25 ˚C



Maßzeichnung (Maße in mm, wenn nicht anders angegeben)
Package Outlines (Dimensions in mm, unless otherwise specified)



Kathodenkennung: abgeschrägte Ecke
Cathode mark: bevelled edge